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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,882	09/09/2003	Kuo-Tung Chang	AMD-H0642	3204

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EXAMINER

LEE, EUGENE

ART UNIT PAPER NUMBER

2815

DATE MAILED: 04/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/658,882

Applicant(s)

CHANG ET AL.

Examiner

Eugene Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 January 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3 and 6-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
- Paper No(s)/Mail Date \_\_\_\_\_.

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 thru 3, and 6 thru 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mehrad et al. 6,765,257 B1 in view of Karp et al. 6,266,269 B1. Mehrad discloses (see, for example, FIG. 1) a memory (integrated circuit device) comprising a flash EPROM array (an array of flash memory cells) of memory elements (cells), said memory elements comprising a source, a drain and a stacked gate structure comprising a control gate line (control gate) 15, floating gate (charge trapping layer) 13, insulating layer (see FIG. 2 of Mehrad), horizontal source line (common source line) 17, and source contact 32. The source contact 32 is coupled to the source diffusion. The source contact 32 is coupled to said horizontal source line 17 wherein the horizontal source line is under the stacked gate structure. The source contact is in the same row as drain contacts 34. Mehrad does not disclose a region under said stacked gate structure comprising overlapping lateral diffusions of implantation regions of said source and said drain. However, Karp discloses (see, for example, FIG. 2C) a programmed storage transistor (integrated circuit device) 205 comprising diffusions (lateral diffusions of source and drain implantation regions) 206 that overlap. In column 7, lines 13-42, Karp discloses that the single diffusion region provides a permanent conductive path, which enhances reliability and decreases

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feature size. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have a region under said stacked gate structure comprising overlapping lateral diffusions of implantation regions of said source and said drain in order to enhance reliability and decrease feature size.

Regarding claim 2, see, for example, FIG. 1, wherein Mehrad discloses the control gate line (substantially straight word lines) 15.

Regarding claim 3, see, for example, FIG. 1, wherein Mehrad discloses the horizontal source line 17 having a substantially uniform width.

Regarding claim 6, see, for example, column 1, lines 12-13, wherein Mehrad discloses a FLASH memory array which is non-volatile memory.

Regarding claim 7, see, for example, FIG. 1 wherein Mehrad discloses a floating gate 13.

Regarding claim 9, see, for example, FIG. 2 wherein Mehrad discloses a source diffusion (one of said implantation regions) and a source contact (first source contact) 32.

Regarding claims 10, and 13, see, for example, FIG. 2 wherein Mehrad discloses a horizontal source line 17, which couples source diffusions. The horizontal source line connects multiple cells together to share the same source region.

Regarding claim 11, see, for example, FIG. 2 wherein Mehrad discloses multiple gates (gate and second gate) 13.

Regarding claim 12, see, for example, FIG. 2 wherein Mehrad discloses multiple source contacts (first source contact, and second source contact) 32.

***Response to Arguments***

3. Applicant's arguments with respect to claims 1-3, and 6-13 have been considered but are moot in view of the new ground(s) of rejection.

Regarding the applicant's argument on page 6, lines 1-6 of the response filed 1/13/06 that Karp is not a flash memory cell, this argument is not persuasive. In claim 1, Karp describes the memory cell as non-volatile (which flash memory cells are) and therefore, it would have been obvious to combine Mehrad and Karp since they both address non-volatile memory cells, and clearly in the same art. Further, Karp does disclose a motivation (see, for example, column 7, lines 13-42) for overlapping the source and drain regions wherein overlapping the source and drain regions produces a single diffusion region that provides a permanent conductive path, (which enhances reliability and decreases feature size).

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### INFORMATION ON HOW TO CONTACT THE USPTO

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eugene Lee whose telephone number is 571-272-1733. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Parker can be reached on 571-272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Eugene Lee  
March 23, 2006

